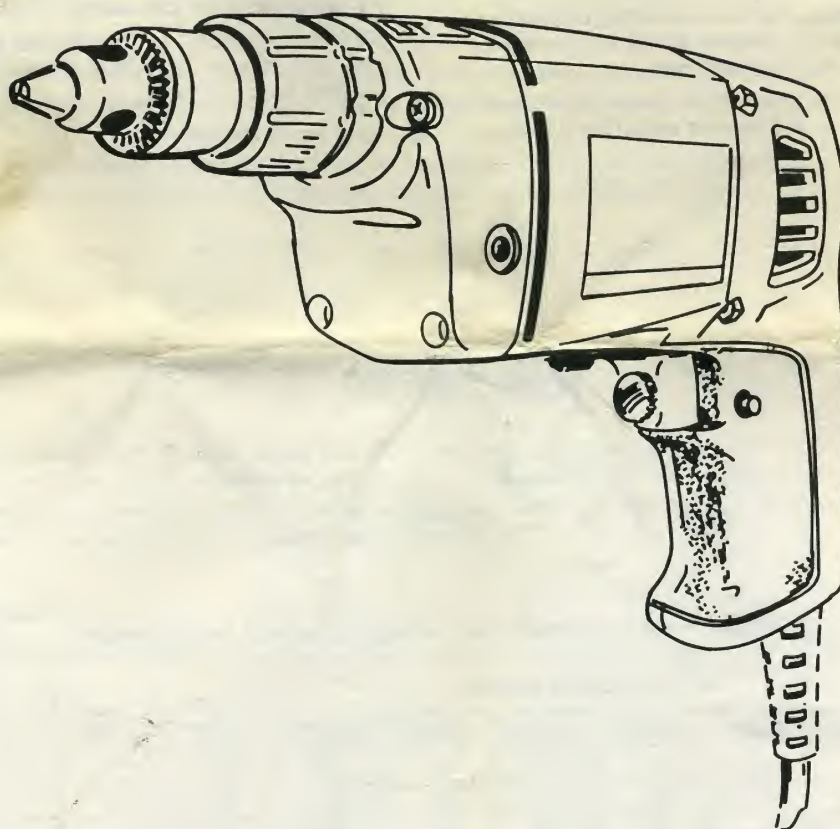


SKIL®

SKIL MODEL 599

XTRA-TOOL

DOUBLE INSULATED



INSTRUCTION MANUAL

SKIL CORPORATION 5033 NORTH ELSTON AVENUE

F-312153

CHICAGO, ILLINOIS 60630

8/73

GENERAL SAFETY PRECAUTIONS

1. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
2. **AVOID DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations. Keep work area well lit. Do not expose power tool in rain.
3. **KEEP CHILDREN AWAY.** All visitors should be kept safe distance from work area.
4. **STORE IDLE TOOLS.** When not in use, tools should be stored in dry, high or locked-up place—out of the reach of children.
5. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was designed.
6. **USE RIGHT TOOL.** Don't force small tool or attachment to do the job of a heavy-duty tool.
7. **WEAR PROPER APPAREL.** No loose clothing or jewelry to get caught in moving parts. Rubber gloves and footwear are recommended when working outdoors.
8. **USE SAFETY GLASSES.** Use safety glasses with most tools. Also face or dust mask if cutting operation is dusty.
9. **DON'T ABUSE CORD.** Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.
10. **SECURE WORK.** Use clamps or vise to hold work. It's safer than using your hand and it frees both hands to operate tool.
11. **DON'T OVERREACH.** Keep proper footing and balance at all times.
12. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
13. **DISCONNECT TOOLS.** When not in use; before servicing; when changing blades, bits, cutters, etc.
14. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
15. **AVOID ACCIDENTAL STARTING.** Don't carry plugged-in tool with finger on switch. Be sure switch is OFF when plugged in.
16. **Wear ear protectors.**

SKIL GUARANTEE

We guarantee to replace free of charge any part or parts found by us to be defective due to faulty material or workmanship, provided the repairs have not been made or attempted by others. Should a tool fail to give satisfactory service, return the complete product to our nearest Factory Service Center, or Authorized Service Station, with transportation charges prepaid. This guarantee does not cover damage caused by misuse or normal wear. No other guarantee, however expressed or implied, on our products is authorized by us.

PRELIMINARY INSTRUCTIONS

VOLTAGE WARNING

Before connecting the tool to a power source (receptacle, outlet, etc.) be sure the voltage supplied is the same as that specified on the nameplate of the tool. A power source with voltage greater than that specified for the tool can result in **serious injury** to the user—as well as damage to the tool. If in doubt, **do not plug in the tool**. Using a power source with voltage less than the nameplate rating is harmful to the motor.

DOUBLE INSULATION

Your new Skil Xtra-tool is equipped with a two wire cord and two prong plug which can be used in standard 115 V.A.C. outlets.

No grounding of the tool is necessary. The housing is made of a dielectric material which protects the operator in case of failure of the standard functional insulation within the electrical system. When servicing, use only identical replacement parts.

Your double insulated housing possesses great impact resistance and durability. Certain cleaning agents must be avoided to preserve the finish of the tool housing. These agents include chlorinated cleaning solvents, carbon tetrachloride and gasoline.

Kerosene and ethyl alcohol are recommended to clean the housing of grease and oil. Household detergents that do not contain ammonia can be also used.

EXTENSION CORDS

When using an extension cord be sure to use one heavy enough to carry the current your tool will draw. An undersized cord will cause a drop in line voltage, resulting in loss of power and overheating. The following table shows the correct size to use depending on cord length and nameplate amperage rating. If in doubt, use the next heavier gage. **NOTE:** The smaller the gage number, the heavier the cord. Repair or replace damaged cords.

Recommended Minimum Gage for Cord Extensions for Portable Electric Tools

Ampere Rating Range	Length of Cord in Feet									
	115 V	25 Ft.	50 Ft.	100 Ft.	150 Ft.	200 Ft.	250 Ft.	300 Ft.	400 Ft.	500 Ft.
0-2		18	18	18	16	16	14	14	12	12
2-3		18	18	16	14	14	12	12	10	10
3-4		18	18	16	14	12	12	10	10	8
4-5		18	18	14	12	12	10	10	8	8
5-6		18	16	14	12	10	10	8	8	6
6-8		18	16	12	10	10	8	6	6	6
8-10		18	14	12	10	8	8	6	6	4
10-12		16	14	10	8	8	6	6	4	4
12-14		16	12	10	8	6	6	6	4	2
14-16		16	12	10	8	6	6	4	4	2
16-18		14	12	8	8	6	4	4	2	2
18-20		14	12	8	6	6	4	4	2	2

**SKIL MODEL 599
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DOUBLE INSULATED**

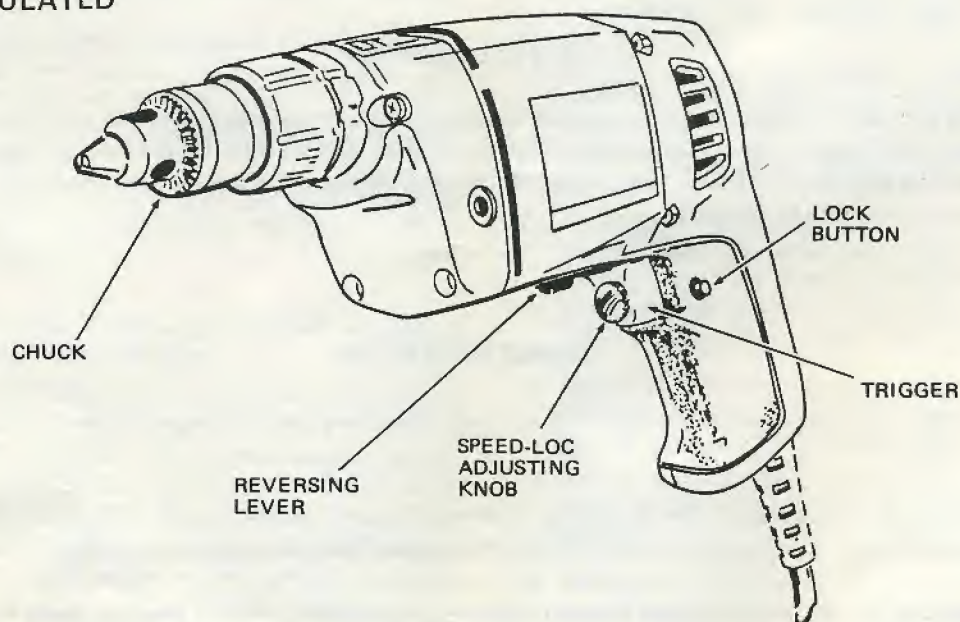


Figure 1.

SPECIFICATIONS

Capacity—Steel	3/8" Dia.
Masonry	1/2" Dia.
No Load Speed	
Revolutions	0-850 RPM
Hammering Blows	0-33,750 BPM
Amperage Rating at 115 Volts	3.2
Motor	Universal A.C. only, 50 to 60 Hz.

XTRA-TOOL SAFETY RULES

1. WEAR SAFETY GOGGLES—be alert at all times. 2. Disconnect the plug before changing accessories. 3. Never run the tool at free speed. This will help prevent possible throwing of accessories. 4. Keep cord free at all times.

FEATURES

SWITCH ADJUSTING KNOB

The adjusting feature permits speeds from zero to the highest RPM limit of the tool. Turn adjusting knob shown in Figure 1 clockwise all the way for maximum RPM. Turn it counter-clockwise all the way and the tool will not operate. Turn the knob clockwise any distance you wish and the drill will go no faster than that setting of the adjusting knob.

VARIABLE SPEED CONTROL

Turn the adjusting knob to its maximum clockwise position to obtain maximum RPM. The amount of pressure exerted on the trigger switch controls the drill speed giving you complete speed control over the bit.

Be careful not to overheat the motor when working at low speeds for a long time. Occasionally remove the tool from the work, remove the accessory from tool and run motor at full free speed, allowing the fan to cool the motor.

REVERSE LEVER

The reverse lever above the trigger permits changing the direction of rotation of the drill. For forward rotation (normal); push lever to right. For reverse rotation; push lever to left as shown in Figure 1.

CAUTION: To reverse the drill, the motor should be completely stopped, lock button disengaged and finger off the trigger.

The variable trigger and lock button may be used for either direction.

LOCK BUTTON

The lock button permits continuous operation at the maximum RPM governed by the adjusting knob.

To lock the switch on, squeeze the trigger, press the lock button and release the trigger. To stop the drill, squeeze the trigger and let go. The locking feature is especially convenient when using accessories like wire brushes, sanders, polishers and drill stands.

Do not use the lock button on jobs that require stopping the drill suddenly.

CHUCK

Open jaws enough to insert the bit shank. Clean and insert bit up to the flutes for small bits or as far as it will go for large bits. Center the bit as you close the jaws by hand. This positions the bit properly, giving maximum contact between chuck jaws and bit shank. To tighten chuck, insert chuck key into each of the 3 key holes in succession and tighten firmly. The chuck can be released by using one hole only.

CAUTION: Do not use bits larger than sizes specified. Using oversize bits overloads the drill and could prematurely wear out the unit.

REMOVING THE CHUCK

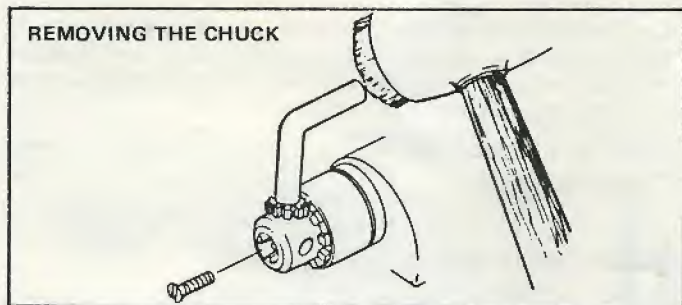


Figure 2.

REMOVING THE CHUCK

Open jaws all the way, remove the screw, (left hand thread) inside the chuck by turning clockwise. Remove the chuck by turning it in the direction of "forward" rotation, see Figure 2. If necessary, insert the key and strike it with a wooden block.

SIDE HANDLE

Thread in the side handle for safe control and ease of operation.

SELECTOR RING

The selector ring permits changing the mode of operation to: "HAMMER & CHISEL", "HAMMER-DRILL" or DRILL • DRIVE".

To shift:

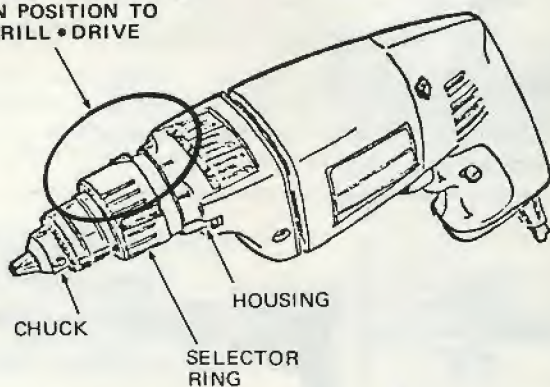
CAUTION: Remove any accessory that may be in the chuck (drill bits being the only exception). 1. Keep the tool pointed away from you. 2. Hold the handle with one hand and the selector ring with the other. 3. Select the mode of operation. It may be necessary to rotate the chuck (run tool at low RPM) to shift from "HAMMER & CHISEL" to "HAMMER-DRILL".

IMPORTANT NOTICE

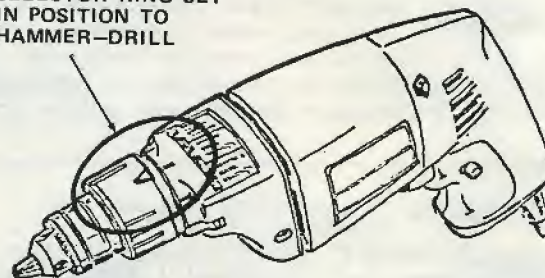
The chuck must be locked when in the Hammer & Chisel mode. To lock the chuck when selecting the Hammer & Chisel mode perform the following:

1. Make certain that the indicator marks on the selector ring and the housing are aligned.
2. By hand, turn and pull chuck toward the housing, in less than 1/4 turn the chuck will lock in place.
3. Chuck must be locked in the positive non-rotating position to be sure that chuck will not turn. With bit fastened securely in chuck —test on scrap wood before starting actual work.

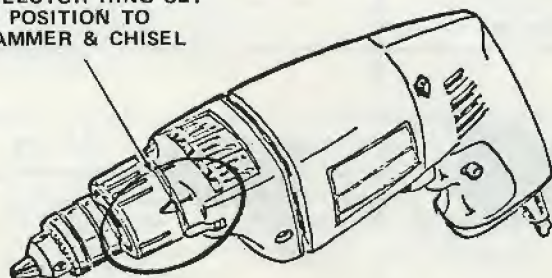
SELECTOR RING SET
IN POSITION TO
DRILL • DRIVE



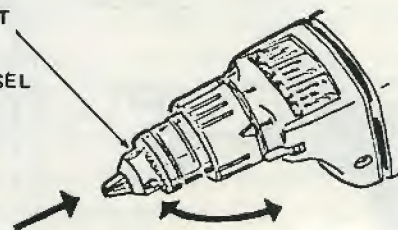
SELECTOR RING SET
IN POSITION TO
HAMMER-DRILL



SELECTOR RING SET
IN POSITION TO
HAMMER & CHISEL



PULL TOWARD
HOUSING AND
TURN THIS PART
OF CHUCK TO
LOCK IN
HAMMER & CHISEL
POSITION



OPERATING INSTRUCTIONS

With proper accessories you can:

Drill in metal, wood, concrete, masonry, laminates • Drive and Remove: screws, nuts, bolts • Buff • Sand • Polish • Cut circular holes • Mix paint • Clean stone • Scrape • Chisel • Chip • Channel • Gouge • Shape • Remove paint • Remove plaster • Remove tile • Remove putty.

For best results practice on scrap material to familiarize yourself with the capabilities of the tool and the particular accessory you choose to use.

HAMMER & CHISEL MODE

WARNING: Be sure the selector ring is in the HAMMER & CHISEL position before installing any accessory. If the selector ring is in the HAMMER-DRILL or DRILL-DRIVE position an accessory such as a chisel or scraper may cause serious injury to the user as well as damage to the work.

For fast, clean work keep tools sharp at all times. They are made of special high grade steel, carefully heat-treated. Like all quality cutting tools, they must be ground lightly and kept cool during grinding or temper will be drawn out. Be sure to maintain original cutting angles.

Keep the cutting edges sharp. It pays to regrind or replace a tool when it becomes dull, as the time saved with a sharp tool more than offsets the cost.

HAMMER-DRILL MODE (Masonry Materials Only)

CAUTION: Use only carbide drill bits for your safety and ease of operation. The hammer and drilling action lets you drill holes much faster through masonry materials, such as concrete, stone, brick, or tile, than you could with just drilling action. **CAUTION:** Do not attempt to cut through reinforcing rods embedded in concrete with carbide tipped bits.

Low speeds are most effective when using carbide tipped bits. Little pressure is required when cutting through soft masonry materials such as brick; however, with hard materials such as concrete, more pressure is required.

Never let a carbide drill bit spin in the hole without cutting. This dulls the bit.

DRILL • DRIVE MODE

Drilling: Start your drill from a dead stop and slowly build up speed. By using a slow starting speed, you are able to keep the bit from wandering. Increase speed as bit "bites" into work.

Hold the drill firmly and apply steady pressure. Too much pressure at very low speeds will stall the drill. As the speed is increased, the pressure can also be increased.

To prolong switch life, do not turn switch on while tool is under load. If drill stalls from too much pressure or low speed, remove from work and start over.

Although punch marks are not required in any drilling with Variable Speed Control, it is suggested you practice on smooth harder materials such as metal, glass, glazed tile, etc., before starting the actual job.

The harder the material, the greater the pressure required.

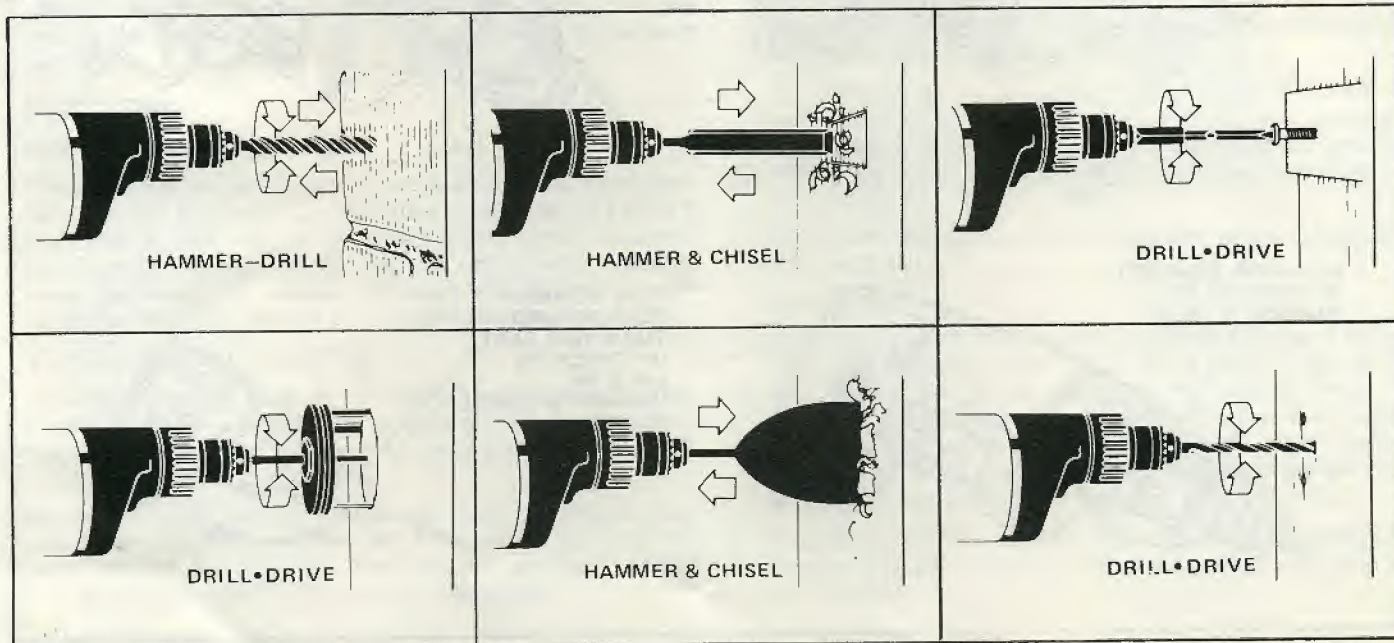
A rule of thumb for the correct speed to use: The harder the material, the slower the speed: the softer the material the faster the speed.

Two ways to make drilling metal easier are to:

1. Lubricate the tip of the bit.
2. When drilling a large hole, drill a small hole first, then enlarge it to the size desired.

BUFFING, SANDING AND POLISHING

Use slow speed for rough sanding. For convenience, lock the trigger with the lock button. For buffing, fine sanding or polishing, select the most efficient speed with your trigger finger, set the adjusting knob and lock it.



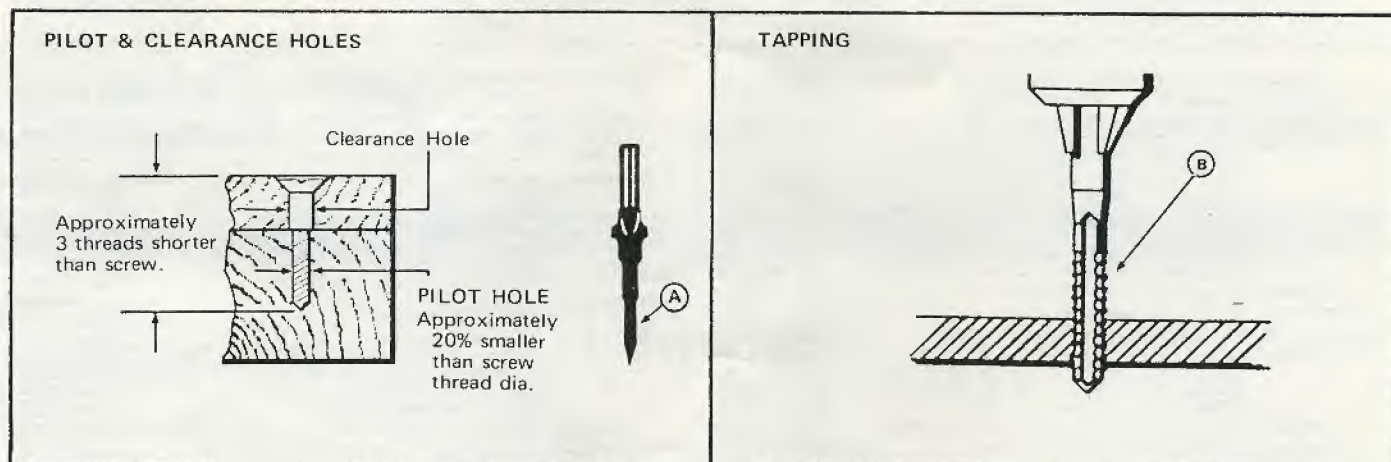


Figure 3.

DRIVING SCREWS

Install the proper driver bit. Start up slowly increasing speed as screw runs down. Set screw snugly by slowing to a stop.

Before driving screws, pilot and shank clearance holes should be drilled. Screwdrill and countersink bits are available to do this in one easy operation. (see A, Figure 3).

The pilot hole in the bottom piece should be approximately 70% of the root diameter of the screw for soft woods and 90% for hard woods. The depth of the pilot hole into the bottom piece is important. At least three threads of the screw should be embedded in solid material beneath the bottom of the of the pilot hole. If the pilot hole is extended to the full depth of the screw, the holding power of the screw will be reduced.

The shank clearance hole through the top piece must be the same as the major diameter of the screw, so that the screw will fit through the hole without forcing or splitting the wood. Use a countersink bit to countersink the screw head.

To remove screws, move reversing lever to left position for counter-clockwise rotation. Insert bit into screw head. Start drill slowly in reverse, with adequate pressure increase speed as screw comes out.

DRIVING NUTS OR BOLTS

Install a socket adapter and socket. Start slowly, increasing speed as the nut or bolt runs down. Set it snug by slowing the tool to a stop. If this procedure is not followed, the tool may "jerk" around when the bolt sets.

TAPPING SCREW THREADS

For best results, use spiral-point gun taps. (see B, Figure 4). Squirt a little oil on the side of the hole and on the tap before starting the tap in the hole.

CAUTION: Very slow speed must be used for tapping. Squeeze trigger gently and set adjusting knob for slow speed. It may be necessary to readjust. Do not force the tap. Advance a short distance, then reverse the drill, reverse drill often to clear chips and prevent the tap from breaking. Use only enough pressure to keep the tap cutting. Be careful not to run the tap too far into a blind hole.

Reverse the drill and use slow speed to withdraw tap.

TAPPING

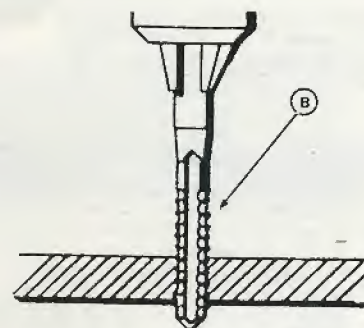


Figure 4.

ACCESSORIES

Listed below are the maximum sizes of accessories that can be used with this tool.

Dial Saws:	2-1/2" dia.
Sanding Disc and Polishing Bonnet:	5" dia.
Wire Brushes:	4" dia.
Driving Screw:	No. 12 screw
Auger Bits:	1-1/4" dia.
Masonry Bits:	1/2" bit
Tapping Screw Thread:	3/8" tap

Always drill proper size pilot hole before tapping, see Machinery Hand Book or equivalent for proper size pilot and tap combinations.

Wood Chisels:	Part No. 73488	1/4"
	Part No. 73489	1/2"
	Part No. 73490	3/4"
	Part No. 73487	1/2"
Carving Gouge:	Part No. 73491	
Mortar Grout Chisel:	Part No. 73492	1-1/4"
Scraper Blades:	Part No. 73493	3"

WARNING: The use of any other accessories not specified in this manual could create a hazard.

PREVENTIVE MAINTENANCE PROGRAM

Preventive Maintenance of your Xtra-tool is very easy. There are just 4 simple steps below to follow:

1. Clean the vents by blowing compressed air through them with the motor running. If compressed air is not available: Pull the power plug from the outlet and clean the vents out with a brush.
2. Wipe the cord to prevent deterioration from oil or grease.
3. Occasionally apply two or three drops of SAE No. 30 oil into the felt washer under the selector ring (front end).
4. When the brushes have worn and the motor stops, you should return your Xtra-tool to the nearest Skil Service Center for the following:
 - Brushes replaced.
 - Parts cleaned and inspected.
 - Relubricated with fresh lubricant.
 - Electrical System tested.
 - All repairs.

We're growing places to serve you quickly, efficiently.

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